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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/747,599	12/22/2000	Glynn Russell Ashdown	P98,1245	4501

7590 03/28/2002

SCHIFF HARDIN & WAITE
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EXAMINER

NGUYEN, DILINH P

ART UNIT PAPER NUMBER

2814

DATE MAILED: 03/28/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/747,599

Applicant(s)

ASHDOWN, GLYNN RUSSELL

Examiner

DiLinh Nguyen

Art Unit

2814

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 December 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kikushima (U.S. Pat. 5,912,592) in view of Mori et al. (U.S. Pat. 5,659,199).

Kikushima discloses a semiconductor device (figs. 1-2) comprising:

a substrate (column 6, line 51) having a mounting pad provided with an adhesive material in a mounting region (column 5, lines 66 et seq.);

a mounting plate 71 formed of thermally conductive material (column 6, lines 40-45), wherein the lead frame having a first major surface being positioned on the mounting pad of the substrate;

a radiating lead 11 thermally connected to the mounting plate and being spaced from the substrate (fig. 2, column 6, lines 35 et seq.);

an IC chip 60 (fig. 2, lumn 5, lines 66) mounted on the lead frame at a second major surface opposite the first major surface. However, Kikushima fails to disclose a mounting plate comprising a plurality of adhesive flow openings therethrough.

Mori et al disclose mounting plate 11 (figs. 1-2, column 4, lines 15-25 and 52-58) comprising a plurality of adhesive flow openings therethrough to better secure the chip to the mounting plate. Therefore, it would have been obvious to one having ordinary

skill in the art at the time the invention was made to modify the device of Kikushima to better secure the chip to the mounting plate, as shown by Mori et al.

- Regarding claims 2-3, Mori et al. disclose a paste material 6 or solder (fig. 5, column 1, lines 42-43). It would have been obvious that the adhesive material of Mori et al. is thermal adhesive.
- Regarding claim 4, Kikushima discloses the J- shape radiating lead 11 (fig. 1, column 7, lines 9-10) comprising an extension generally perpendicular to the mounting plate; and a portion generally parallel to the mounting plate and spaced therefrom. Kikushima discloses the claimed invention except for not specifically point out the extension is positioned in a direction opposite to the first major surface. It would have been an obvious and a design alternative.
- Regarding claim 5, Kikushima discloses the portion overlies the mounting plate (fig. 1)
- Regarding claim 6, Kikushima discloses the portion includes lateral extension (fig. 1).
- Regarding claims 7-8, Kikushima discloses the mounting plate and the extension and the portion form a U shape (fig. 1). It would have been an obvious matter of design choice wherein the mounting plate and the extension and the portion form a Z shape.

3. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kikushima (U.S. Pat. 5,912,592) in view of Mori et al. (U.S. Pat. 5,659,199) and further in view of Perino et al. (U.S. Pat. 6,352,435).

Kikushima and Mori et al. disclose the claimed invention except for a channel along an edge of the mounting plate, wherein the channel receiving a tab extending from the heat generating component.

Perino et al. disclose a semiconductor device (Fig. 8, column 10, lines 40 et seq.) comprising: a base 810 having a slot and wherein an edge-mountable chip 840 placed in the slot (abstract) to provide the mechanical coupling of edge mountable chips to a bus of a circuit board with relative ease. Therefore, it would have been obvious to modify the device of Kikushima and Mori et al. by the method of Perino et al. to crimp the chip in position of the mounting plate with relative ease.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DiLinh Nguyen whose telephone number is (703) 305-6983. The examiner can normally be reached on 8:00AM - 6:00PM (M-F).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, OLIK CHAUDHURI can be reached on (703) 308-2794. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

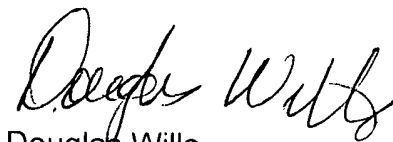
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DLN

March 22, 2002

A handwritten signature in cursive script, appearing to read "Douglas Wille".

Douglas Wille
Patent Examiner